



APPLICATIONS

Wireless Network
Telecom/Datacom
Industry Control System
Measurement Equipment
Semiconductor Equipment

FEATURES

- 15 WATTS OUTPUT POWER
- OUTPUT CURRENT UP TO 3A
- STANDARD 2.00 X 1.60 X 0.40 INCH PACKAGE
- HIGH EFFICIENCY UP TO 82%
- 4:1 WIDE INPUT VOLTAGE RANGE
- SIX-SIDED CONTINUOUS SHIELD
- FIXED SWITCHING FREQUENCY
- UL60950-1, EN60950-1, & IEC60950-1 SAFETY APPROVALS
- CE MARKED
- COMPLIANT TO RoHS II & REACH

DESCRIPTION

The FDC15 series offer 15 watts of output power from a 2.00 x 1.60 x 0.40 inch package. The FDC15 series have 4:1 wide input voltage of 9~36VDC and 18~75VDC. The FDC15 features 1600VDC of isolation, short-circuit and over-voltage protection.

TECHNICAL SPECIFICATION All specifications are typical at nominal input, full load and 25°C otherwise noted

OUTPUT SPECIFICATIONS			
Output power		15 Watts, max.	
Voltage accuracy		± 1%	
Minimum load (Note 6)		See Table	
Voltage adjustability		± 10%	
Line regulation	LL to HL at Full Load	± 0.2%	
Load regulation	Min. load to Full load	Single Dual	± 0.5% ± 1%
Cross regulation (Dual)	Asymmetrical load 25% / 100% FL		± 5%
Ripple and noise	20MHz bandwidth		See table
Temperature coefficient		±0.02% / °C, max.	
Transient response recovery time		25% load step change	250µs
Over voltage protection	5VDC output	6.2VDC	
Zener diode clamp	12VDC output	15VDC	
	15VDC output	18VDC	
Over load protection	% of FL at nominal input	150%, max.	
Short circuit protection		Continuous, automatics recovery	
GENERAL SPECIFICATIONS			
Efficiency		See table	
Isolation voltage	Input to Output Input(Output) to Case	1600VDC, min. 1minute 1600VDC, min. 1minute	
Isolation resistance	500VDC	10 ⁹ ohms, min.	
Isolation capacitance	300pF, max.		
Switching frequency	270kHz±10%		
Safety approvals		IEC60950-1, UL60950-1, & EN60950-1	
Case material		Nickel-coated copper	
Base material		Non-conductive black plastic	
Potting material		Epoxy (UL94 V-0)	
Dimensions		2.00 X 1.60 X 0.40 Inch (50.8 X 40.6 X 10.2 mm)	
Weight		48g (1.69oz)	
MTBF (Note 1)	MIL-HDBK-217F	2.250 x 10 ⁶ hrs	

INPUT SPECIFICATIONS			
Input voltage range	24VDC nominal input 48VDC nominal input	9 ~ 36VDC 18 ~ 75VDC	
Input filter	Pi type		
Input surge voltage	24VDC input 48VDC input	50VDC 100ms, max. 100VDC 100ms, max.	
Input reflected ripple current	20mA p-p		
Start up time	Nominal input and constant resistive load	Power up	20ms
Remote ON/OFF (Note 7) (Positive logic)	DC-DC ON DC-DC OFF	Open or 3.5V < Vr < 12V Short or 0V < Vr < 1.2V	
Input current of remote control pin	Nominal input	-0.5mA~+0.5mA	
Remote off state input current	Nominal input	20mA	
ENVIRONMENTAL SPECIFICATIONS			
Operating ambient temperature	-40°C ~ +85°C (with derating)		
Maximum case temperature	100°C		
Storage temperature range	-55°C ~ +125°C		
Thermal impedance (Note 8)	Natural convection Natural convection with heat-sink	10°C/Watt 8.24°C/Watt	
Thermal shock	MIL-STD-810F		
Vibration	MIL-STD-810F		
Relative humidity	5% to 95% RH		
EMC CHARACTERISTICS			
EMI	EN55022	Class A, Class B	
ESD	EN61000-4-2	Air Contact	± 8kV ± 6kV Perf. Criteria B
Radiated immunity	EN61000-4-3	10 V/m	Perf. Criteria A
Fast transient (Note 9)	EN61000-4-4	± 2kV	Perf. Criteria B
Surge (Note 9)	EN61000-4-5	± 1kV	Perf. Criteria B
Conducted immunity	EN61000-4-6	10 Vr.m.s	Perf. Criteria A

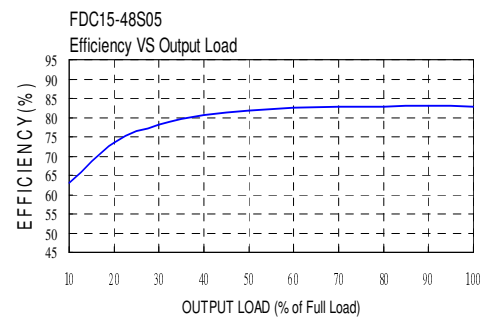
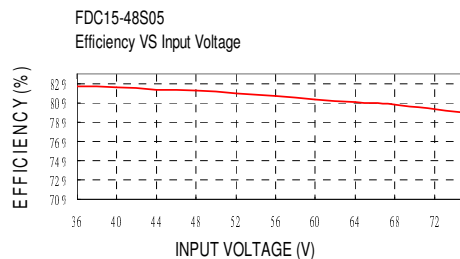
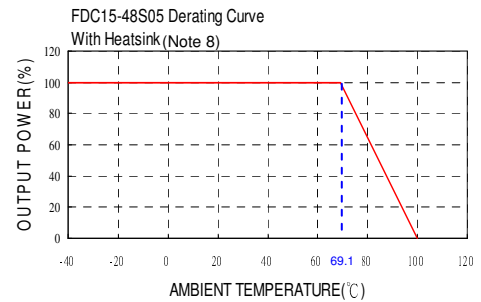
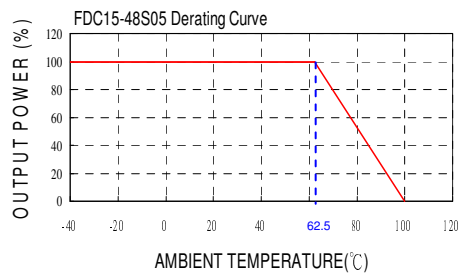


Model Number	Input Range	Output Voltage	Output Current		Output ⁽²⁾ Ripple & Noise	No load ⁽³⁾ Input Current	Eff ⁽⁴⁾ (%)	Capacitor Load max ⁽⁵⁾
			Min. load	Full load				
FDC15-24S05	9 ~ 36 VDC	5 VDC	210mA	3000mA	75mVp-p	20mA	80	6800μF
FDC15-24S12	9 ~ 36 VDC	12 VDC	100mA	1250mA	75mVp-p	10mA	82	890μF
FDC15-24S15	9 ~ 36 VDC	15 VDC	80mA	1000mA	75mVp-p	20mA	82	570μF
FDC15-24D05	9 ~ 36 VDC	± 5 VDC	± 105mA	± 1500mA	75mVp-p	20mA	80	± 1700μF
FDC15-24D12	9 ~ 36 VDC	± 12 VDC	± 50mA	± 625mA	75mVp-p	20mA	82	± 300μF
FDC15-24D15	9 ~ 36 VDC	± 15 VDC	± 40mA	± 500mA	75mVp-p	20mA	82	± 200μF
FDC15-48S05	18 ~ 75 VDC	5 VDC	210mA	3000mA	75mVp-p	15mA	80	6800μF
FDC15-48S12	18 ~ 75 VDC	12 VDC	100mA	1250mA	75mVp-p	15mA	82	890μF
FDC15-48S15	18 ~ 75 VDC	15 VDC	80mA	1000mA	75mVp-p	10mA	82	570μF
FDC15-48D05	18 ~ 75 VDC	± 5 VDC	± 105mA	± 1500mA	75mVp-p	10mA	80	± 1700μF
FDC15-48D12	18 ~ 75 VDC	± 12 VDC	± 50mA	± 625mA	75mVp-p	20mA	82	± 300μF
FDC15-48D15	18 ~ 75 VDC	± 15 VDC	± 40mA	± 500mA	75mVp-p	15mA	82	± 200μF

Note

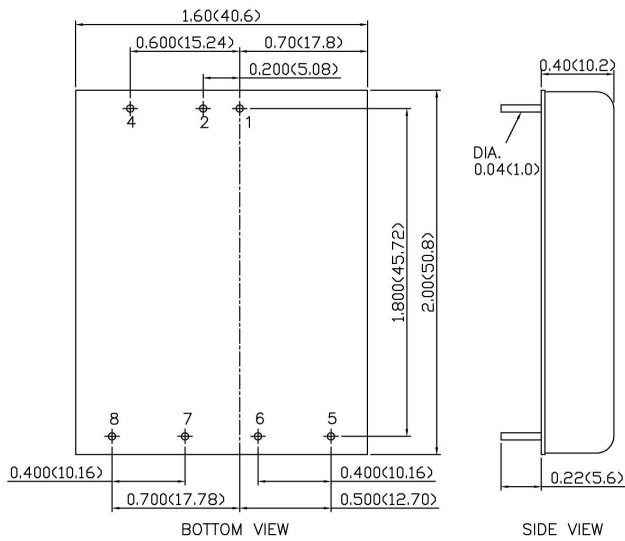
1. MIL-HDBK-217F @Ta=25 °C, Full load.
2. Typical value at nominal input and full load. (20MHZ BW.)
3. Typical value at nominal input and no load.
4. Typical value at nominal input and full load.
5. Test by minimum input and constant resistive load.
6. The output requires a minimum loading on the output to maintain specified regulation. Operation under no-load condition will not damage these devices, however they may not meet all listed specification.
7. The CTRL pin voltage is reference to -INPUT.
8. Heat-sink is optional and P/N: 7G-0011C-F.
9. An external input filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5. The filter capacitor Power Mate suggest: Nippon chemi-con KY series, 220μF /100V.

CAUTION: This power module is not internally fused. An input line fuse must always be used.





MECHANICAL DRAWING



1. All dimensions in Inch (mm)
Tolerance: X.XX±0.02 (X.X±0.5)
X.XXX±0.01 (X.XX±0.25)
2. Pin pitch tolerance ±0.01(0.25)
3. Pin dimension tolerance ±0.004 (0.1)

PIN CONNECTION		
PIN	SINGLE	DUAL
1	+INPUT	+INPUT
2	-INPUT	-INPUT
4	CTRL	CTRL
5	NO PIN	+OUTPUT
6	+OUTPUT	COMMON
7	-OUTPUT	-OUTPUT
8	TRIM	TRIM

